

MOUSE TRAP™

Operation and Service Manual 1st Edition

Exidy

1.0 INSPECTING MOUSE TRAPTM

All Exidy equipment is carefully packaged in well-padded cardboard containers to prevent damage during shipment. Before signing the delivery receipt, you should follow this procedure:

1. Check for obvious damage and make certain that the physical piece count of the shipment matches the piece count on the bill of lading. These two procedures should always be done **before** signing the delivery receipt.
2. Shortages and/or obvious damage to the packaging on any given shipment should be noted **in writing** on the delivery receipt **before** signing for the delivery.
3. If concealed damage is suspected on any shipment, those packages believed to contain the damaged goods **should be opened in the presence of the delivery driver**. If the goods have sustained concealed damage, a description of said damage should be noted **in writing** on the delivery receipt **before** signing for the delivery.
4. **Never apply power to any game with noticeable damage.**

1.1 FILING A CLAIM

To file a claim, follow this procedure:

1. Any and all damaged freight, including packaging, **should be retained by the consignee** until a physical inspection of said freight can be made by a representative of the carrier involved.
2. The Claims Manager for the carrier involved should be notified as soon as possible, after the damaged goods are received. Preferably, the carrier's Claims Manager should be notified within forty-eight (48) hours of receipt of the goods by the consignee.

3. If warranted, a written claim should be filed with the carrier involved. A detailed description of the damage(s) should be provided and copies of all supporting documents, **including bill of lading and/or delivery receipt, inspection report, and invoice**, should be attached.

4. The sooner a claim is filed, the better for all parties concerned. The carrier against which a claim is filed is required, by law, to respond to (acknowledge) that claim within thirty (30) days of receiving same and must reach a final disposition in the matter within one hundred twenty (120) days.

If no immediate cabinet damage is evident, perform the following visual inspection:

1. Open each door with appropriate key.
2. Examine each major and electrical component thoroughly for scrapes, dents, broken or missing parts and loose or missing screws.
3. Check for loose cable connectors.
4. Visually verify that all the integrated circuit devices (IC's) plugged into sockets are properly seated and that no IC pins are bent or misaligned.

If you find any damage during this inspection, file a claim with the carrier. Send a complete report of the damage to Exidy.

1.2 INSTALLATION

Planning the location of the game should involve both physical and electrical considerations. Such physical considerations concern the placement of the equipment with respect to these clearances:

Height: 71.75 inches
Width: 25.25 inches
Depth: 32.75 inches,
Weight: 316 pounds

An indoor, relatively dust-free environment is necessary, with proper conditions required of any electrical component. Electrical considerations include availability of an AC outlet with the correct voltage and frequency. Because MOUSE TRAP™ is designed for front access to all components, the only time you need consider access to the back is for monitor service.

NOTE:

The cabinet must be within five feet of an AC outlet. Be certain that a ground jack or terminal is available at the outlet.

CAUTION:

DO NOT remove the AC ground prong from the plug. Doing so **voids your warranty!**

1.3 CHECKOUT PROCEDURE

After properly inspecting and installing MOUSE TRAP™, we suggest following this procedure to check its operation:

1. Plug the AC jack into the AC outlet.
2. Once powered up, after five seconds of silence, a quick beep sounding like an organ chord, is heard. This is part of the Exidy Audio Diagnostic Test. A single beep indicates all is well with the audio board. If more than one beep is heard, see the section on Self-Diagnostic Tests.

3. Allow 8-10 seconds to pass for the CRT to warm up and Self-Diagnostic Tests to complete.
4. Observe the TV monitor display to assure the correct attract mode is present on the screen, described in the section on Normal Operation. If the MOUSE TRAP™ display is incorrect, contact Exidy Customer Service Department.
5. Insert the appropriate coin or token into either of the coin slots. All the messages in the attract mode will flash the following line:

PRESS PLAYER ONE START
or
PRESS ONE OR TWO PLAYER START

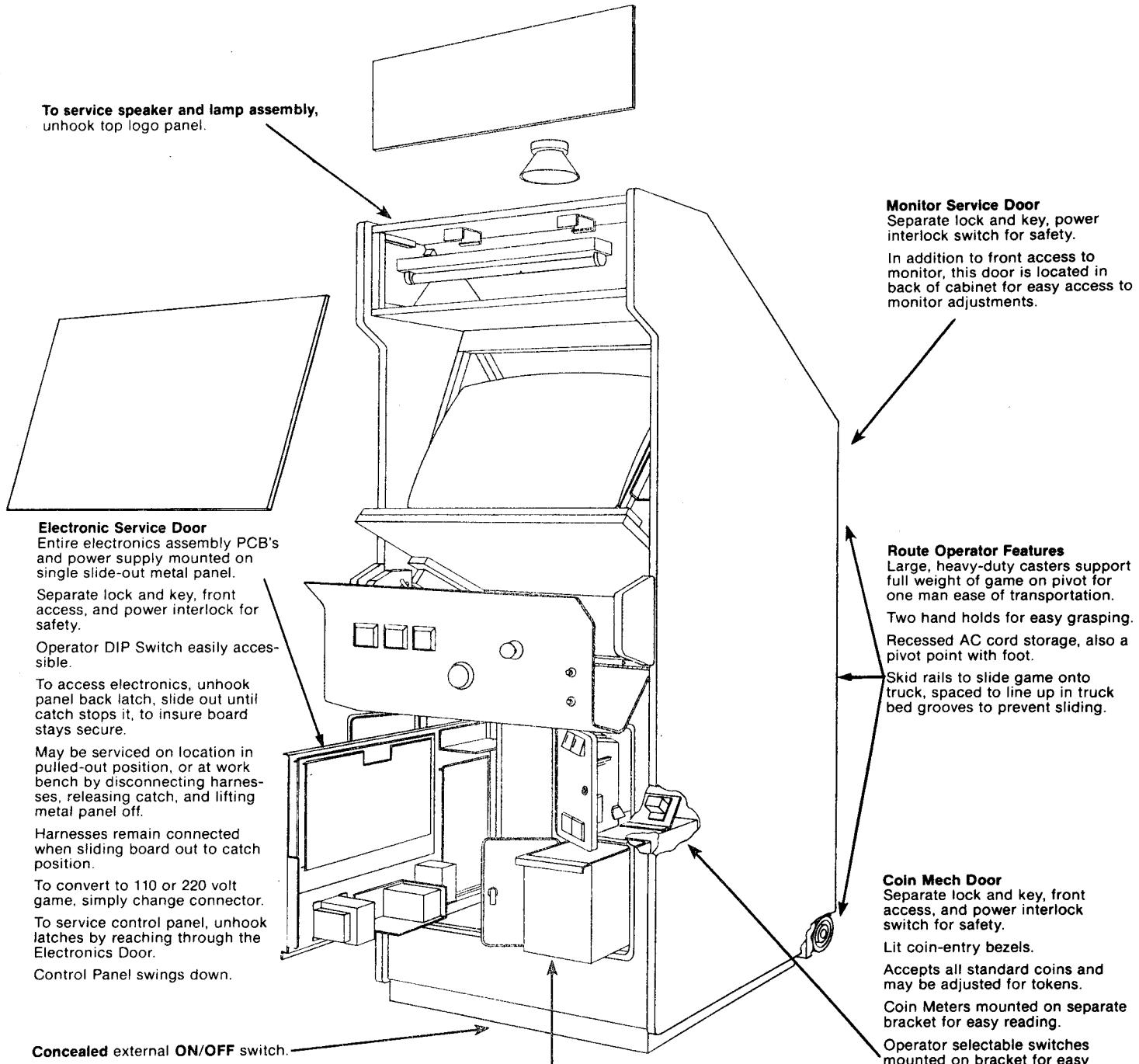
depending on the number of coins dropped into slot.
6. Press one or two player start and play the game to verify that all screen images are displayed.

If assistance or repairs are necessary, contact the Exidy Customer Service Department, (800) 538-8402.

INTRODUCING THE EXIDY OPERATOR CONVENIENCE PACKAGE

Exidy's New Operator Convenience Package makes all components accessible through the front of the game. Each door has its own sepa-

rate lock and key, securing game service to **capable** hands, and **profits** to the **right** hands!



390 Java Drive Sunnyvale, CA
94086 Phone: (408) 734-9410,
Telex: 357-499.

Coin Box Door
Separate lock and key, front access, and power interlock switch for safety.

Oversize Coin Box enclosed in strong, solid metal box.
Inaccessible through any other door, for maximum security.

2.0 ADJUSTMENTS

2.1 POWER SUPPLY ADJUSTMENTS

All DC Power required to operate MOUSE TRAP™ is supplied by the Exidy Power Supply Module.

CAUTION: Only certified technicians should make adjustments on all components of MOUSE TRAP™. AC line voltage selection is available in your MOUSE TRAP™ game by setting the appropriate jumpers on the power chassis. Only the +5v DC is adjustable. This must be adjusted to:

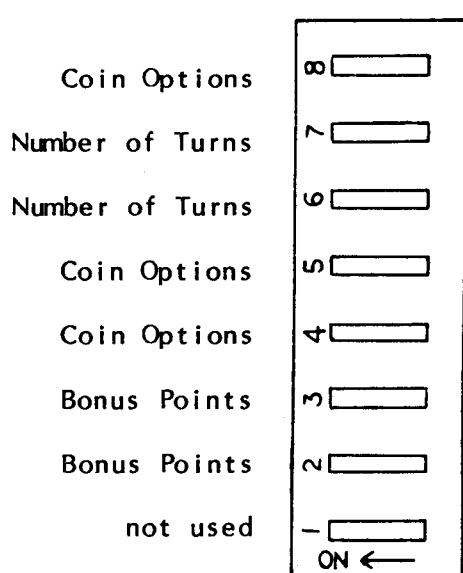
+5.00v DC +/- .25v

as measured on the Logic PCB near the microprocessor (location 2A).

2.2 SELECTABLE OPTIONS

MOUSE TRAP™ has several switch selectable options controlled by an 8-position DIP switch located on the main logic board at position 16A. This switch is accessible through the front electronics door. Simply slide the logic board out and locate the DIP switch on the lower left-hand corner.

The following drawing shows the particular functions controlled by the 8-position DIP switch.



Functions of the 8-position DIP Switch

2.3 SELECTABLE DIP SWITCH SETTINGS

MOUSE TRAP™ is shipped with the dip switch already set for optimum dollar return. Should you decide to change the settings, you may select any of the following options by setting the proper switch accordingly:

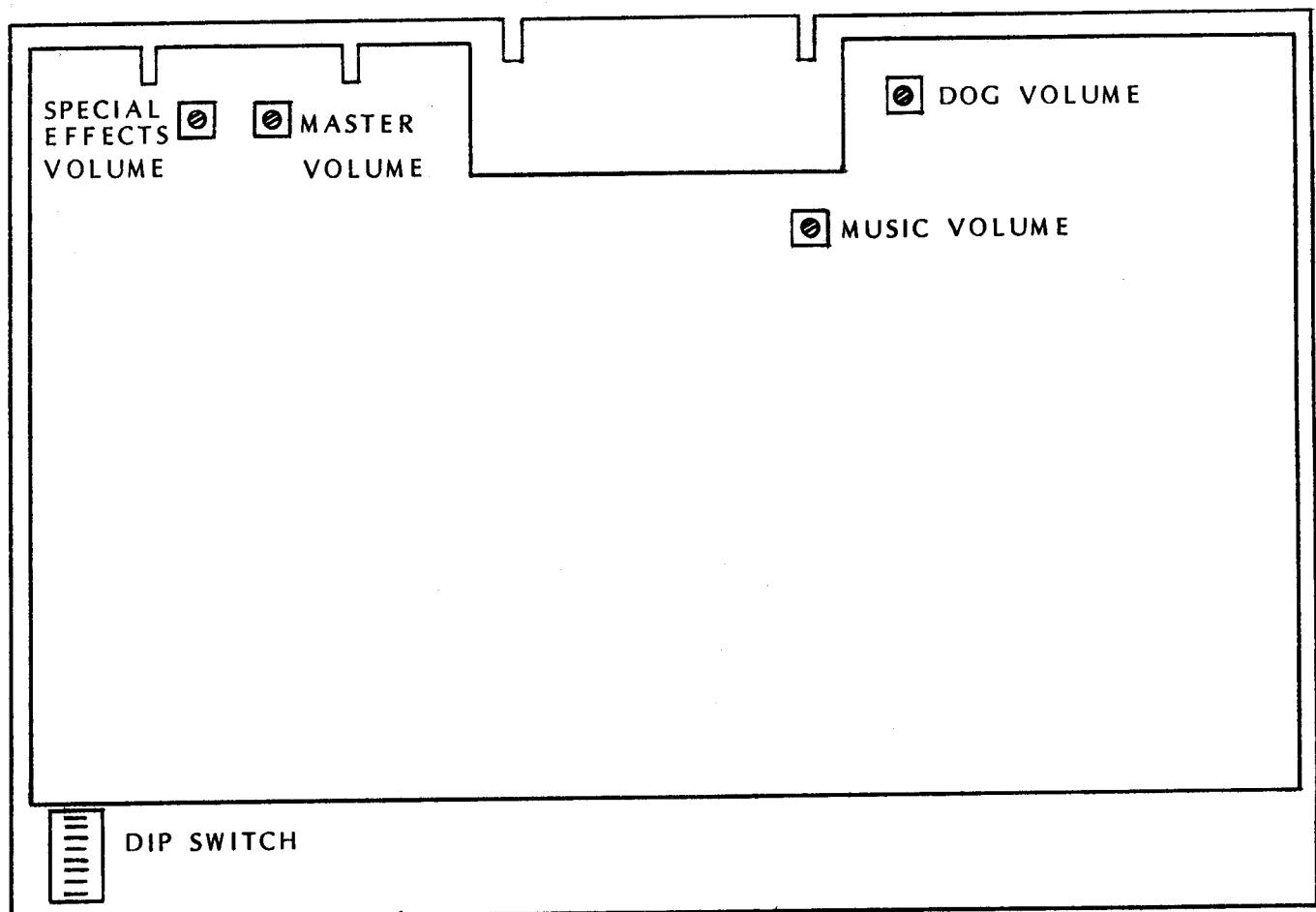
A. COINAGE	Switch 4	Switch 5	Switch 8
1 Coin - 1 Credit	OFF	OFF	OFF
2 Coins- 1 Credit	OFF	ON	OFF
1 Coin - 2 Credits	ON	OFF	OFF
1 Coin - 4 Credits	ON	ON	OFF
1 Coin - 3 Credits or 2 Coins- 7 Credits	OFF	ON	ON
1 Coin in Left Slot- 1 Credit	OFF	OFF	ON
1 Coin in Right Slot- 5 Credits			
One Coin in Left Slot- 1 Credit	ON	OFF	ON
1 Coin in Right Slot- 4 Credits			
Two Coins in Left Slot- 1 Credit	ON	ON	ON
1 Coin in Right Slot- 3 Credits			

B. NUMBER OF TURNS	Switch 6	Switch 7
2 turns	OFF	OFF
3 turns	ON	OFF
4 turns	OFF	ON
5 turns	ON	ON

E. BONUS TURN (Extra turn awarded when selectable number of points are made).	Switch 2	Switch 3
Extra turn for 30,000 points	OFF	OFF
40,000	ON	OFF
50,000	OFF	ON
60,000	ON	ON

2.4 AUDIO BOARD ADJUSTMENTS

The illustration that follows points out the four audio adjustments and the location of the DIP switch. The audio board rides piggyback on the logic board, mounted on the left wall of the game, when viewed from the front service door.



3.0 SELF DIAGNOSTIC TESTS

MOUSE TRAP™ has two diagnostic test modes. The first mode, the Logic/Audio Diagnostic Test Mode, checks the RAM and ROM chips on the Logic Board, and simultaneously checks the Audio Board. This test mode is the normal self-test mode and is automatically performed when MOUSE TRAP™ is first turned on. The second mode tests the Controls and Color only. To run this test, activate the coin switch while powering up. We will explain both of these modes in full detail.

You may bypass both diagnostic modes by depressing either player one or player two start button while powering up. After 8 seconds of the message "STAND BY VERSION X", (where X is a number) the Attract Mode appears.

3.1 LOGIC/AUDIO DIAGNOSTIC TEST MODE

The RAM Test

When MOUSE TRAP™ is first turned on, a processor and video RAM test is done. If the RAM passes, it goes immediately into the ROM test, without a message indicating it passed the RAM test.

If a RAM chip fails, an attempt is made to indicate the RAM chip where a failure was detected. Since the screen depends on a properly functioning RAM, this indication may not be displayed. A failed RAM may be indicated by a digit from 0 to 7 in every position on the screen using four colors. The code for these digits is as follows:

Number on Screen RAM chip to check

0	5A	Processor RAM failure
1	4A	
2	8B	Screen RAM failure
3	7B	
4	11C	
5	13C	
6	12C	Video RAM failure
7	14C	

The RAM test cycles if the failure is persistent.

The ROM Test

If the RAM test passes, the ROM test begins. The message STAND BY VERSION X appears on the screen (where X is a number). One by one, exclamation points (!) appear on the screen. Each exclamation mark indicates half (2K) of a ROM board chip, numbered 6A through 13A, has passed the diagnostic test. After all marks appear, the game then goes into the Attract Mode, indicating all is well.

If any failure is detected during the ROM test, a hex digit appears instead of an exclamation point with a "BAD ROM" message at the top of the screen. The test repeats indefinitely if a bad ROM is encountered. The key for which chip to check is as follows:

Message: ROM Chip to check:

0	lower 2K of 11A
1	upper 2K of 11A
2	lower 2K of 10A
3	upper 2K of 10A
4	lower 2K of 9A
5	upper 2K of 9A
6	lower 2K of 8A
7	upper 2K of 8A
8	lower 2K of 7A
9	upper 2K of 7A
A	lower 2K of 6A
B	upper 2K of 6A

The Audio Test

While the Logic tests are underway, the Audio board is also being checked.

Five seconds after power on, one or more quick beeps, like an organ chord, are heard. This is part of the Exidy Audio Diagnostic Test. The number of beeps that sound indicate different conditions of the Audio board.

The following code is an indication **only**, of where to first check the Audio Board. Because this diagnostic test only evaluates certain components, other circuitry is relied upon for the test. Should this other circuitry fail, the diagnostic test may not, then, point directly to the failure. Please use the results of this test as a guideline for further troubleshooting.

The code is as follows:

0 beep: If no beeps are heard, along with a hum or random notes, this may indicate a failure in 3A and/or 7A.

1 beep: All audio hardware is OK. However, be sure to check the Attract Mode Cycle anyway for a possible message to check the Audio Board. In occasional instances, this can occur. The message will further direct you.

2 beeps: ZERO PAGE RAM failure. Check 6532 RAM I.O. Timer Array at location 7B on the board.

3 beeps: (will not occur)

4 beeps: ROM failure

5 beeps: INTERRUPT failure. Check 6532 at location 7B.

In addition, this message appears during power up **only** if the Audio Board needs to be checked:

AUDIO SELF TEST ERROR

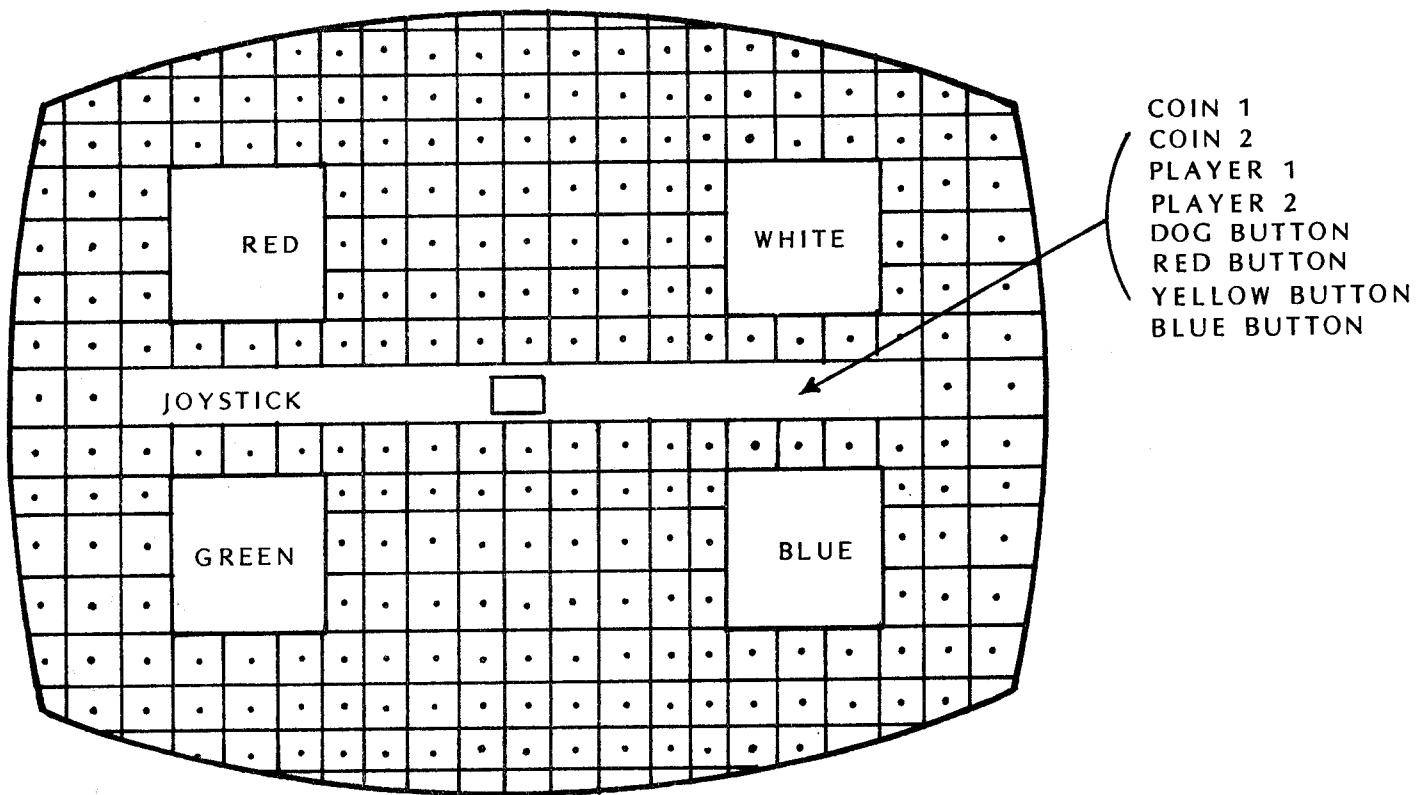
or

AUDIO COMMUNICATION ERROR

3.2 CONTROL AND COLOR TEST MODE

If desired, you may test all player controls and screen colors. To do so, activate either coin switch at power-up. The game then enters the Control/Color Test Mode. This mode lasts for seven minutes to give you time to test and make adjustments. After that, the Attract Mode begins.

In the Control/Color Test Mode, the screen shows this pattern:



The grid pattern tests your screen for any distortion or convergence.

The solid blocks of color (red, white, green, and blue) allow you to adjust the color. When any player control (player 1 start, player 2 start, or red, blue, yellow, or Dog button) or coin switch (coin 1 or coin 2) is activated, its name appears below the white box. This shows that the switch connection is proper. When the joystick is activated, the message Joystick appears below the red box. Also, in the middle of the screen, a square indicates the joystick direction.

4.0 NORMAL OPERATION

4.1 ATTRACT MODE

After the MOUSE TRAP™ is powered up and the self-diagnostic test is performed, the Attract Mode starts up, showing the following messages:

MOUSETRAP™

CREDITS 00

ONE COIN FOR ONE CREDIT

ONE CREDIT FOR ONE PLAYER
TWO CREDITS FOR TWO PLAYERS

EXIDY

(P) COPYRIGHT 1981 (C)

The number of coins or any currency per game is operator selectable and the message will reflect that choice.

MOUSETRAP HALL OF FAME

LWH	49720	INCREDIBLE
DJS	47340	FABULOUS
VIC	44130	GREAT
MRK	37830	SUPER
HAI	25650	GOOD

JOIN THE MOUSETRAP HALL OF FAME
BY ENTERING YOUR INITIALS
FOR A HIGH SCORE

At power up, this Hall of Fame contains fictitious high scores. The first player to exceed the lowest score may enter his score and initials. The Hall of Fame will show the high player's score until power is turned off, and then the fictitious scores reappear.

The following game instructions appear, in pictorial form:

MOUSE EATS CHEESE, BONES, TREASURES

DOG EATS CAT, CHEESE, BONES, TREASURES

CAT EATS MOUSE

HAWK EATS MOUSE AND DOG

IN MAKES HAWK STUPID

BONE TURNS MOUSE INTO DOG
WHEN YOU USE THE DOG BUTTON

A few seconds of game play is then shown and the Attract Mode cycle begins again.

4.2 Game Play

Despite many cats on the prowl, the player steers a mouse through a playfield of halls where the mouse chomps cheese for points and finds other red prizes for bonus value.

The mouse searches out dog bones which are accumulated at the top of the screen. Each bone allows the mouse to become a ferocious dog when the 'dog button' on the control panel is pressed. Now the player is the aggressor, and cats are open game for additional points of escalating value. After several seconds, the red dog begins blinking blue. This warns that his power is wearing off and he'll soon be a mere mouse again.

When all the cheese morsels on one level are eaten up, the player is given another game field with more challenge.

Randomly, a purple hawk flies over the walls in search of a delicious mouse or dog. The player's only defense is to enter the secret passage marked "in" at the center of the screen. This quickly transports the mouse or dog through an unseen tunnel to one of the four corners. This tactic makes the hawk "dumb", or aimless in his flight. The mouse or dog can then escape the hawk.

The player has the added strategy of doors to open and shut to his advantage. At the touch of a button, the player may open or close three colors of doors. By closing a door, the mouse can block a cat's advance. Or, when the mouse turns into a dog, the skilled player can use the doors to trap cats, earning additional points of escalating value for each one overtaken.

4.3 BONUS TURN FEATURE

An extra turn is given to a player everytime he scores 30,000, 40,000, 50,000, or 60,000 (operator selectable) points. A good player may rack up any number of bonus turns throughout a game, but the screen does not display more than five.

4.4 ENTERING THE MOUSE TRAPTM HALL OF FAME

Anytime a player's score exceeds one of the five current high scores, he is eligible to enter his initials in the Vanity Table. If both players of a two player game are record high scorers, the highest of the two is first invited to enter his initials. To do so, he directs the mouse around an alphabet chart with the joystick. Once on the letter desired, he hits the DOG button. The RUB feature allows a player to erase mistaken letters. Once the correct initials are keyed in, the player should go to END, and hit the DOG button. This will log in his initials, and return to the next mode.

The Hall of Fame Mode runs on a timer. If a player does not enter his or her initials, the Attract Mode eventually takes over.

LOGIC BOARD ASSEMBLY PARTS LIST

PART NUMBER	DESCRIPTION
177-3391-14	Logic PCB Assembly
77-3391-14	Logic PCB
58-0002-00	Spacer
22-0001-02	I.C. 74LS00
22-0002-02	I.C. 74LS02
22-0003-02	I.C. 74LS04
22-0004-00	I.C. 7407
22-0005-02	I.C. 74LS08
22-0006-02	I.C. 74LS11
22-0007-02	I.C. 74LS20
22-0008-02	I.C. 74LS21
22-0009-02	I.C. 74LS27
22-0010-02	I.C. 74LS32
22-0011-02	I.C. 74LS74
22-0012-02	I.C. 74LS112
22-0013-02	I.C. 74LS138
22-0214-02	I.C. 74LS139
22-0015-02	I.C. 74LS157
22-0016-02	I.C. 74LS161
22-0017-02	I.C. 74LS166
22-0018-02	I.C. 74LS193
22-0019-02	I.C. 74LS241
22-0020-02	I.C. 74LS245
22-0021-02	I.C. 74LS374
25-0001-00	I.C. MICROPROCESSOR 6502A
23-0001-00	6301 PROM
23-0002-00	6331 PROM
23-0003-00	6331 PROM
20-0001-00	IN4002 DIODE
02-4712-00	RESISTOR, 470 OHM 1/4W 5%
02-1222-00	RESISTOR, 1.2K 1/4W 5%
02-2222-00	RESISTOR, 2.2K 1/4W 5%
02-3322-00	RESISTOR, 3.3K 1/4W 5%
09-2212-00	RESISTOR, 220 OHM 1/8W 5% 10 PIN SIP
09-2222-00	RESISTOR, 2.2K 1/8W 5% 10 PIN SIP
09-4722-00	RESISTOR, 4.7K 1/8W 5% 10 PIN SIP
09-6822-00	RESISTOR, 6.8K 1/8W 5% 10 PIN SIP
41-0001-00	CONNECTOR, PCB FEMALE
10-1034-1	CAPACITOR, .01 UF CERAMIC DISC
10-1044-1	CAPACITOR, .1 UF CERAMIC DISC
11-6853-0	CAPACITOR, 6.8 UF 25V DIPTANT
40-0004-00	CONNECTOR, PCB MALE
13-4775-0	CAPACITOR, 470UF 10V ELECTROLYTIC
47-0001-00	DIPSHUNT JUMPER PAKS 16 PIN
49-5002-00	DIP SWITCH 8 POSITION
29-0001-00	CRYSTAL 11.289MHZ (SERIES)
44-1601-00	DIP SOCKETS 16 PIN LOW PROFILE
44-2401-00	DIP SOCKETS 24 PIN LOW PROFILE
44-4001-00	DIPSOCKETS 40 PIN LOW PROFILE
44-1401-00	DIP SOCKETS 14 PIN LOW PROFILE
44-1801-00	DIP SOCKETS 18 PIN LOW PROFILE
11-1053-00	CAPACITOR 1UF 25V DIPTANT
02-2212-00	RESISTOR, 220 OHM 1/4W 5%

LOGIC BOARD ASSEMBLY PARTS LIST (continued)

PART NUMBER	DESCRIPTION
02-1802-00	RESISTOR, 18 OHM 1/4W 5%
10-3314-4	CAPACITOR, 330PF CERAMIC DISC
02-4732-00	RESISTOR, 47K
11-1063-00	10UF 16V DIPTANT
23-0004-00	2732, EPROM
23-0005-00	2716, EPROM
23-0006-00	2114 STATIC RAM
02-1822-00	RESISTOR, 1.8K 1/4W 5%
02-2272-00	RESISTOR, 2.7K 1/4W 5%
02-1052-00	RESISTOR, 1M 1/4W 5%
27-0003-00	I.C., OSC NE555
20-0006-00	DIODE, 4454
23-0014-00	2732, EPROM
23-0015-00	2732, EPROM
23-0016-00	2732, EPROM
23-0017-00	2732, EPROM
23-0018-00	2732, EPROM

AUDIO/COLOR BOARD ASSEMBLY

PART NUMBER	DESCRIPTION
177-3392-14	AUDIO/COLOR PCB ASSEMBLY
77-3392-14	AUDIO/COLOR PCB
22-0013-00	I.C. 74LS138
26-0001-00	I.C. 6520-A
22-0023-00	I.C. 4069
22-0003-02	I.C. 74LS04
22-0001-02	I.C. 74LS00
22-0021-02	I.C. 74LS374
22-0024-00	I.C. 4053
22-0025-00	I.C. 4175
22-0011-02	I.C. 74LS74
22-0026-00	I.C. LM324
22-0027-02	I.C. 74LS86
22-0028-00	I.C. 4051
22-0014-02	I.C. 74LS139
22-0029-02	I.C. 74LS148
22-0030-02	I.C. 74LS151
22-0031-02	I.C. 74LS174
10-1044-1	CAPACITOR, .1 UF CERAMIC
10-2204-1	CAPACITOR, 22PF 16V CERAMIC
10-1034-1	CAPACITOR, .01UF 16V CERAMIC
13-3365-1	CAPACITOR, 33UF 25V ELECTROLYTIC
13-1075-00	CAPACITOR, 100UF 16V ELECTROLYTIC
13-4755-00	CAPACITOR, 4.7UF 16V ELECTROLYTIC
02-3332-00	RESISTOR, 33K 1/4W 5%
02-3322-00	RESISTOR, 3.3K 1/4W 5%
02-1062-00	RESISTOR, 10M 1/4W 5%
02-3012-00	RESISTOR, 300 OHM 1/4W 5%
02-1802-00	RESISTOR, 18 1/4W 5%
02-2232-00	RESISTOR, 22K 1/4W 5%
02-2722-00	RESISTOR, 2.7K 1/4W 5%

AUDIO/COLOR BOARD ASSEMBLY (continued)

PART NUMBER	DESCRIPTION
02-1322-00	RESISTOR, 1.3K 1/4W 5%
02-6812-00	RESISTOR, 680 OHM 1/4W 5%
02-3312-00	RESISTOR, 330 OHM 1/4W 5%
02-1612-00	RESISTOR, 160 OHM 1/4W 5%
02-8202-00	RESISTOR, 82 OHM 1/4W 5%
02-3902-00	RESISTOR, 39 OHM 1/4W 5%
02-1032-00	RESISTOR, 10K 1/4W 5%
07-1034-00	10K POT
29-0002-00	3.579545 MHZ CRYSTAL
47-0001-00	16 PIN DIP SHUNT
44-1401-00	14 PIN DIP SOCKET
44-2401-00	24 PIN DIP SOCKET
44-2801-00	28 PIN DIP SOCKET
44-4001-00	40 PIN DIP SOCKET
44-1601-00	16 PIN DIP SOCKET
02-4712-00	RESISTOR, 470 OHM 1/4
02-2422-00	RESISTOR, 2.4K 1/4W
02-2032-00	RESISTOR, 20K 1/4W
02-1832-00	RESISTOR, 18K 1/4W
02-3922-00	RESISTOR, 3.9K 1/4W
02-2452-00	RESISTOR, 2.4M 1/4/W
22-0039-00	I.C. 74LS42
23-0007-00	2732 EPROM
23-0008-00	2732 EPROM
23-0009-00	2732 EPROM
23-0010-00	2732 EPROM
27-0003-00	NE555 OSC.
22-0033-00	TL081 OP/AMP
27-0004-00	MC3417L DELTA MOD
22-0034-00	4006 CMOS SHIFT REG.
40-0003-00	6 PIN MALE CONNECTOR .156 CENTER
22-0037-00	I.C. 74LS125
22-0015-00	I.C. 74LS157
22-0010-00	I.C. 74LS32
22-0038-00	I.C. 74LS367
25-0003-00	Z80 CPU
22-0035-00	4070 CMOS EXC. OR GATE
22-0036-00	LM741EN OP/AMP
02-2732-00	RESISTOR, 27K OHM 1/4W
84-0014-00	HEATSINK, THM6045
14-2044-00	CAPACITOR, MYLAR .2UF 16V
10-1024-00	CAPACITOR, CERAMIC .001UF 16V
09-0001-00	RESISTOR, 1.8K SIP PAC 8 PIN
09-0002-00	RESISTOR, 4.7K SIP PAC 8 PIN
21-0001-00	NPN TRANSISTOR TIP 120
21-0002-00	PNP TRANSISTOR, TIP 125
14-2224-00	CAPACITOR, MYLAR .0022 UF
23-0011-00	2716, EPROM
23-0012-00	2716, EPROM
23-0013-00	2716, EPROM
40-0004-00	CONNECTOR, PCB MALE
25-0002-00	I.C. 6532

AUDIO/COLOR BOARD ASSEMBLY (continued)

PART NUMBER	DESCRIPTION
25-0001-00	I.C. 6502
27-0001-00	I.C. 6840
22-0022-02	I.C. 74LS154
27-0002-00	I.C. 8253
41-0001-00	CONNECTOR, PCB FEMALE
130-0001-00	ASSEMBLY, FILAMENT X-FORMER
30-0001-00	X-FORMER FILAMENT
46-1003-00	HOUSING, 3 PIN FEMALE
46-0004-00	HOUSING, 4 PIN MALE
45-0003-00	TERMINAL, .09 MALE
37-0001-00	TYRAP
45-0005-00	TERMINAL, .09 FEMALE
132-0001-00	ASSEMBLY, 5V POWER SUPPLY
177-3365-14	UNIVERSAL POWER SUPPLY ASSEMBLY